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Introduction

Inductive Learning: Process of learning new concepts and categories by observing examples (Kornell & Bjork, 2008).

- The order in which an individual learns categories has been shown to affect later categorization of both novel and previously learned stimuli.
- Two orders of item presentation have commonly been studied to explore their effect on inductive learning: **blocked** and **interleaved** presentation.
- Interleaving and blocking vary in how each method directs the learner's attention toward the features of each example, thus affecting how each category is learned.
- A study by Kost, Carvalho, and Goldstone (2015) found that the advantages of interleaved and blocked presentation could be altered when items are repeated during study.
- The current body of literature does not include any study of learning as a result of a combination of blocked and interleaved presentation during repeated, passive study.

Hypothesis #1: Participants who view interleaved-only presentation will outperform those who view blocked-only presentation.

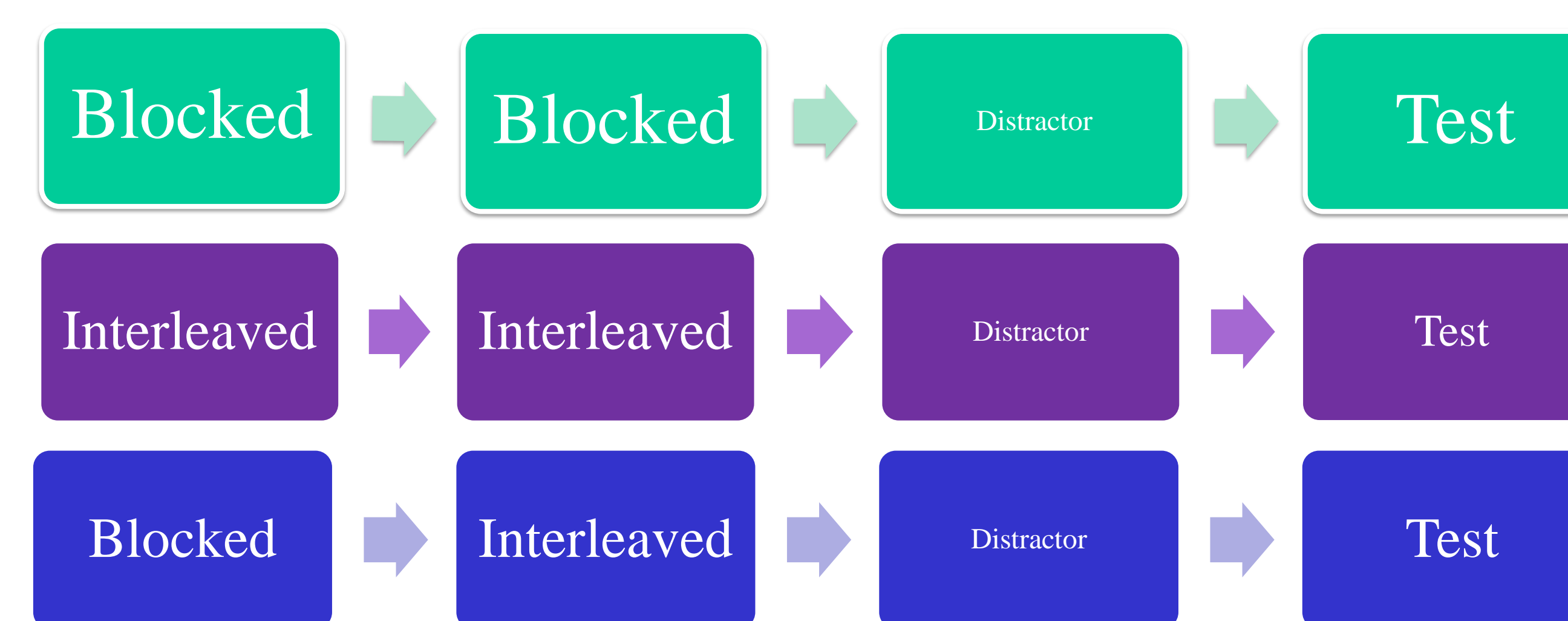
Hypothesis #2: Participants who view blocked presentation first, then view the same items through interleaved presentation (combined approach) will outperform those who view blocked-only or interleaved-only presentation.

Method

- Participants began by completing a questionnaire assessing their artistic backgrounds.
- Study Session:** 36 paintings by the following 6 artists: Georges Braque, Bruno Pessani, Judy Hawkins, Ryan Lewis, Henri-Edmond Cross, and Philip Juras. Once all paintings were shown, the presentation was repeated.
- Distractor Task:** Counting Backward Task (3 minutes)
- Test:** 60 paintings (36 previously studied and 24 novel).



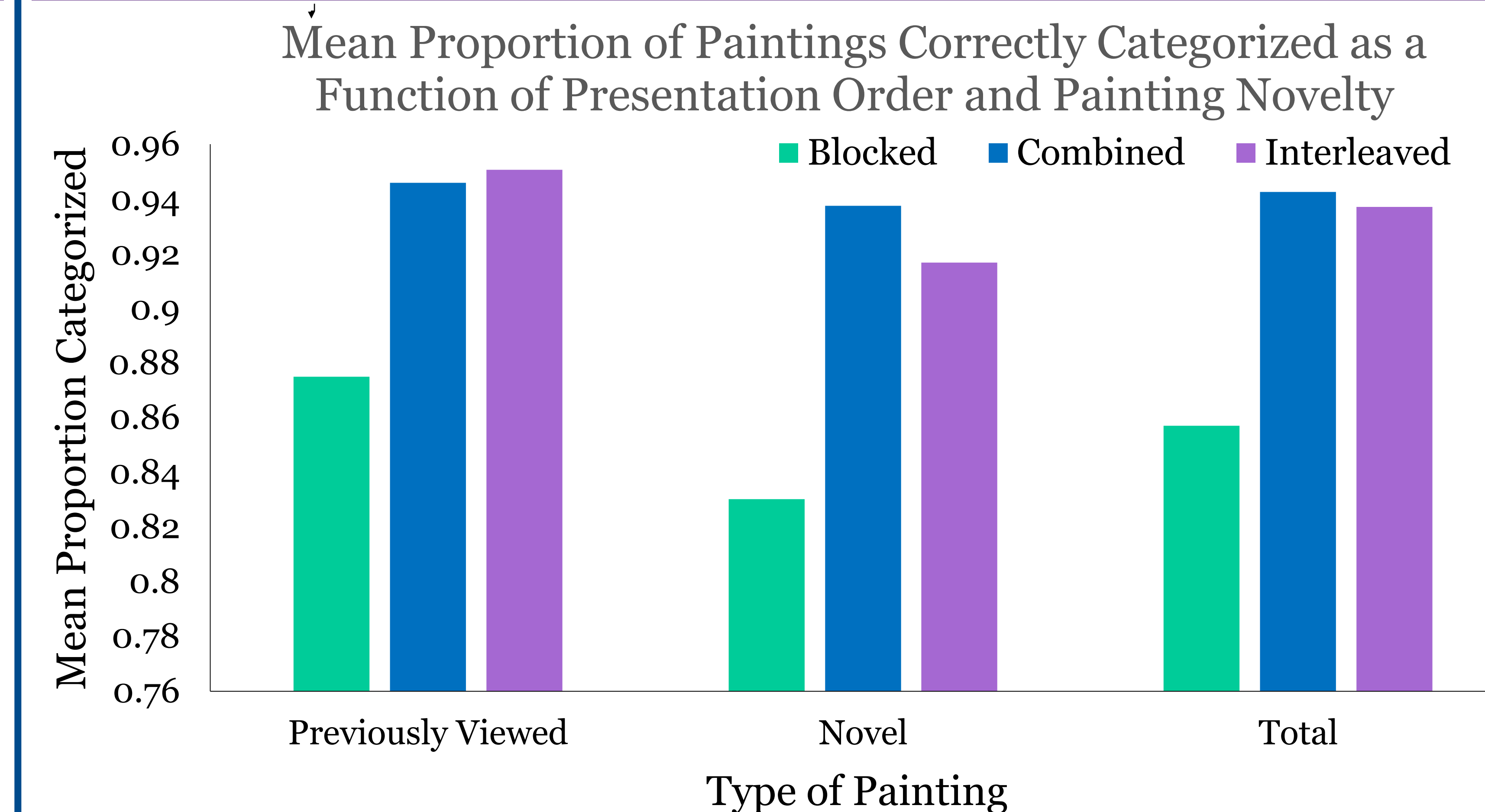
Braque



Results

- A one-way ANOVA indicated that overall test performance varied as a function of study presentation method, $F(2, 117)=6.297$, $p=.003$.
- The combined group ($M=0.94$, $SD=0.11$) significantly categorized more paintings compared to the blocked condition ($M=0.85$, $SD=0.14$), $t(117)=-3.169$, $p=.002$.
- No significant difference between combined condition and interleaved condition ($M=0.93$, $SD=0.11$), $t(117)=-0.201$, $p=.841$.

Results (continued)



Discussion

- It is possible that learning only 6 categories rendered initial study relatively easy regardless of order.
- Learners may have been able to equally distinguish between categories using similar categorization rules after initial study regardless of whether items were first blocked or interleaved.
- The advantage may lie in viewing items in interleaved order during repetition, suggesting that the encoding of between-category differences and within-category similarities did not differ during the first presentation, but the rehearsal of these discriminations during repeated study did.

References

- Kornell, N., & Bjork, R. A. (2008). Learning concepts and categories is spacing the “enemy of induction”? *Psychological science*, 19(6), 585-592. doi: 10.1111/j14679280.2008.02127.
- Kost, A. S., Carvalho, P. F., Goldstone, R. L. (2015). Can you repeat that? The effect of item repetition on interleaved and blocked study. *In Proceedings of the 37th Annual Conference of the Cognitive Science Society*.